

## **C11 CADD Notes**

### **C11.1 General**

#### **C11.1.1 Sheet name conventions**

#### **C11.1.2 Note cell libraries**

#### **C11.1.3 Note organization**

#### **C11.1.4 Abbreviations**

#### **C11.1.5 References**

### **C11.2 Project**

#### **C11.2.1 Index**

**MM No. 195 (Stub abutment design behind MSE walls) Revision to Article 6.5.1.1.2 LRFD Bridge Design Manual**

**1 October 2008**

See C11.2.2.

**Methods Memo No. 157: HS25 Loading on Substructures**  
**4 January 2007**

See C11.2.2.

**Methods Memo No. 205: Update CADD Note E50D**  
**1 August 2008**

See C11.2.2.

#### **C11.2.2 Listing**

**Methods Memo No. 157: HS25 Loading on Substructures**  
**4 January 2007**

As part of the conversion to design using the AASHTO Load and Resistance Factor Design (LRFD) specifications, superstructures for the following bridges shall now be designed using the LRFD specifications:

1. Straight welded steel girder bridges
2. Non-standard rolled steel bridges
3. Pretensioned prestressed concrete bridges
4. Continuous concrete slab bridges

In addition, until we have adopted LRFD design for the complete bridge, substructures shall be designed for HS-25 live loading under the AASHTO standard specifications.

HS-25 loading shall be defined as:

1. The lane load shall be taken as a uniform load of 800 pounds per linear foot of load lane and a concentrated load of 22,500 pounds for moment and 32,500 pounds for shear [AASHTO-I 3.7.1.2, 3.7.1.3, and Figure 3.7.6B].
2. The HS truck shall have a front axle weight of 10,000 pounds and two following axles of 40,000 pounds each. Axle spacing shall be the same as for HS-20 loading [AASHTO-I 3.7.6 and Figure 3.7.7A].
3. The Alternate Military Loading shall remain without increase, as given in the specifications [AASHTO-I 3.7.4].

The following revised design specifications and general note shall be used:

**E50C: Specifications and design stresses, LRFD superstructure and standard substructure bridge**

SPECIFICATIONS:

DESIGN: SUBSTRUCTURE: AASHTO STANDARD SERIES OF 2002.

SUPERSTRUCTURE: AASHTO LRFD SERIES OF 2004.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2001, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

?  
?

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002 AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SERIES OF 2004.

REINFORCING STEEL IN ACCORDANCE WITH STANDARD AASHTO SECTION 8 AND LRFD AASHTO SECTION 5, GRADE 60.

CONCRETE IN ACCORDANCE WITH STANDARD AASHTO SECTION 8 AND LRFD AASHTO SECTION 5,  $f'_c = 3,500$  PSI, EXCEPT BRIDGE DECK AND PRESTRESSED BEAM CONCRETE AS NOTED.

PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET?

BRIDGE DECK  $f'_c =$

STRUCTURAL STEEL IN ACCORDANCE WITH STANDARD AASHTO SECTION 10 AND LRFD AASHTO SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W ).

These standard bridge design notes are to be used on the front estimate sheet where the superstructure is designed using LRFD and the substructure is designed using the Standard Specifications [OBS MM No. 157].

**E104C: Live load, HL-93 superstructure and HS-25 substructure**

THE BRIDGE SUBSTRUCTURE IS DESIGNED FOR HS-25 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

THE BRIDGE SUPERSTRUCTURE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

Use these notes for the design live load requirement for all new bridges on primary highways, where the superstructure is designed using LRFD and the substructure is designed using the Standard Specifications [OBS MM No. 157].

All new projects that have not yet been started shall meet this requirement. In addition, any project currently under design will be assessed to determine the need to meet these requirements. However, in general, only interstate projects may require redesign.

If you have any questions, please check with me.

**Methods Memo No. 205: Update CADD Note E50D**  
**1 August 2008**

The following CADD note has been added to the library. This note should be used on bridge projects where the superstructure and substructure are designed by the 2007 AASHTO LRFD bridge design specifications.

**E50D: Specifications and design stresses, LRFD superstructure and LRFD substructure bridge.**

SPECIFICATIONS:

DESIGN: AASHTO LRFD 4<sup>th</sup> Ed, SERIES OF 2007.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2001, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

?

?

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4<sup>th</sup> Ed, SERIES OF 2007.

REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.

CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5,  $f'_c = 3,500$  PSI, EXCEPT BRIDGE DECK AND PRESTRESSED BEAM CONCRETE AS NOTED.

PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET?

BRIDGE DECK CONCRETE  $f'_c = ?$

STRUCTURAL STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W).

This LRFD bridge design note is to be used on the front estimate sheet where the superstructure and substructure were designed by the AASHTO LRFD 4<sup>th</sup> Ed, Series 2007 [OBS MM No. 205].

If you have any questions, please check with Thayne Sorenson or Dean Bierwagen.

**MM No. 195 (Stub abutment design behind MSE walls) Revision to Article 6.5.1.1.2 LRFD Bridge Design Manual**

**1 October 2008**

When designing bridges with stub abutments behind mechanically stabilized earth retaining walls (MSE walls), the following guidelines shall be used:

1. The front row of piles shall be battered unless the batter increases the bridge length by more than five feet due to the interference with the MSE wall.
2. The centerline of the piling shall be a minimum of three feet from the face of the MSE wall at the bottom of the MSE wall.
3. Corrugated metal pipes (CMP) will not be required around the individual piles unless downdrag forces are a problem. CMP may be provided to reduce downdrag forces in these situations. Check with your section leader for approval.
4. The following CADD general note shall be provided in the plans requiring the contractor to tie the abutment piling group together and provide anchorage for the pile group to prevent shifting of the piles during backfilling.

**E55/M55: Stub abutment piling behind MSE wall**

THE BRIDGE CONTRACTOR SHALL DRIVE ABUTMENT PILING BEFORE THE MECHANICALLY STABILIZED EARTH (MSE) WALL IS CONSTRUCTED AND MAINTAIN PROPER POSITION OF PILING WHILE THE MSE WALL IS BEING CONSTRUCTED. THE PILING SHALL BE TIED TOGETHER BY MECHANICAL MEANS AND ANCHORED TO PREVENT DISPLACEMENT DURING BACKFILLING OPERATIONS AND MSE WALL CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A PLAN TO THE ENGINEER FOR APPROVAL OF THE CONNECTIONS AND ANCHORAGE.

5. This note may be modified for special cases, such as partial driving, addition of tie backs or if additional rows of piles are required for the abutments.
6. If possible, the front and back row of piles should be in alignment to provide more room for MSE straps.

If you have any questions please check with me.

## **C11.3 New bridge**

### **C11.3.1 Index**

**Methods Memo No. 174: Bridge Plan Deck Dimension Table**  
**4 September 2007**

See C11.3.2.

**Methods Memo No. 177: CADD Note E234/M234 for Surface Preparation for Two Course Decks**  
**1 October 2007**

See C11.3.2.

**Methods Memo No. 157: HS25 Loading on Substructures**  
**4 January 2007**

See C11.2.2.

**Methods Memo No. 156: Revised Longitudinal Grooving Notes**  
**4 January 2007**

See C11.3.2.

**Methods Memo No. 197: Revision to E/M 202 - Embedded Deck Hangers in PPCB**  
**1 May 2008**

See C11.3.2.

**Methods Memo No. 147: Embedded Deck Hanger Forms in PPCB**  
**15 May 2007**

See C5.4.2.4.2.

**Methods Memo No. 189: Revision to CADD Note E189/M189**  
**1 March 2008**

See C11.3.2.

**Methods Memo No. 132: Delete CADD Note E134/M134, Supersedes MM No. 126**  
**8 July 2005 (MM No. 126 has been moved to the appendix for this commentary section.)**

The Office of Contracts has decided to include notes in the Proposal, to cover the notification process for bridge removals. Therefore, previously released notes E134/M134 (See MM No. 126) will no longer be required in the bridge plans. These notes will be deleted from the CADD cell library and the CADD notes in the design manual. However, the following commentary will remain in the design manual in the removal section for general information.

“The Office of Location and Environment (OLE) has requested the review of all bridge structures scheduled to be removed to determine if asbestos is present. The bridge office will provide a list of all bridges to be removed, to OLE for their field review. If asbestos is present it will need to be removed prior to demolition of the structure. The asbestos removal will be accomplished by specialty contractors prior to, or in coordination with, the bridge contractor’s project. OLE will generally be responsible for initiating the asbestos removal contract. If asbestos removal cannot be accomplished prior to the bridge contractor’s start date, a coordination note will be placed in the bridge plans.

In addition, DNR has requested notification prior to demolition in order to verify no asbestos is present on any bridge structure prior to starting the demolition process. This notification will be made by OLE based on information provided by the Resident Construction Engineer or the Office of Contracts.”

**Methods Memo No. 143: Longitudinal Grooving for Bridge Decks, Bridge Approaches, Bridge Deck Overlays, & Overlay of Bridge Approaches**  
**23 November 2005**

See C11.3.2.

### C11.3.2 Listing

#### Methods Memo No. 212: Revision to Standard CADD Note E101/M101 – Existing Structure, Field Verify Dimensions 1 April 2009

CADD standard note E101/M101 has been revised as shown below to provide more guidance to the contractor in verifying existing bridge details on bridge repair projects.

##### **E101/M101: Existing structure, field verify dimensions**

ALL ALIGNMENT, STATIONING, CONNECTING DIMENSIONS, AND ELEVATIONS USED IN THE NEW DETAILS IN THESE PLANS WERE DEVELOPED BASED ON THE EXISTING BRIDGE PLANS. THE BRIDGE CONTRACTOR SHALL FIELD VERIFY THESE DETAILS BEFORE STARTING CONSTRUCTION.

This note shall be used on all widening projects and major repairs.

This note shall be used in all pertinent repair projects currently under development. If you have any questions please check with Dean Bierwagen or me.

#### Methods Memo No. 157: HS25 Loading on Substructures 4 January 2007

See C11.2.2.

#### Methods Memo No. 174: Bridge Plan Deck Dimension Table 4 September 2007

The Office of Bridges and Structures will begin to include a Bridge Deck Dimensions table on the Notes and Quantities sheet of all bridge plans starting with the November 2007 letting. This table provides information to the Office of Contracts for entry into the BAMS/DSS database. The information will then be available in order to analyze costs for a particular bridge and to make cost comparisons between bridges. The format of the tables for English and metric plans are as shown below:

##### **E110**

BRIDGE DECK DIMENSIONS TABLE			
	ITEM	UNITS	QUANTITY
1	DECK LENGTH	L.F.	
2	MINIMUM DECK WIDTH	L.F.	
3	MAXIMUM DECK WIDTH	L.F.	
4	DECK AREA	S.F.	

1. DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.

2, 3. DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.

4. DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

**M110**

BRIDGE DECK DIMENSIONS TABLE			
	ITEM	UNITS	QUANTITY
1	DECK LENGTH	M	
2	MINIMUM DECK WIDTH	M	
3	MAXIMUM DECK WIDTH	M	
4	DECK AREA	M <sup>2</sup>	

1. DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.
- 2, 3. DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.
4. DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

Lengths should be to the nearest 0.01m, and areas should be to the nearest 0.1m<sup>2</sup> [OBS MM No. 174].

**Methods Memo No. 138: Revision to 91 – Temporary Shoring Adjacent to Roadway**  
**6 July 2005**

The Construction Office has expressed concern that the Contractors may misinterpret the office's temporary shoring note for Zone 2 (Note E171/M171) or Zone 3 (Note E172/M172) and assume the offices shoring criteria is all they are responsible for. Therefore, E171/M171, "Earth retention, Temporary shoring" note for Zone 2 and E172/M172 "Earth retention, temporary shoring, PE required" note have been revised as shown below. Please use this note on all plans where temporary shoring under Zone 2 or Zone 3 criteria is required.

**E171/M171: Earth retention, temporary shoring**

THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING (SHEET PILE OR OTHER) TO PREVENT THE EARTH UNDER THE TRAFFIC LANE, FROM SLOUGHING IN DURING CONSTRUCTION. ALL COST OF SHORING, WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO DIRECT PAYMENT WILL BE MADE. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. SHORING IS TO BE REMOVED ONLY AFTER BACKFILLING HAS BEEN COMPLETED. THE CONTRACTOR SHALL SUBMIT SHORING PLANS FOR REVIEW. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS STILL APPLIES.

**E172/M172: Earth retention, temporary shoring, PE required**

TEMPORARY SHORING (SHEET PILE OR OTHER) SHALL BE REQUIRED AS NECESSARY TO PREVENT THE EARTH UNDER THE TRAFFIC LANE FROM SLOUGHING IN DURING CONSTRUCTION.

THE CONTRACTOR SHALL SUBMIT A TEMPORARY SHORING PLAN TO THE ENGINEER FOR APPROVAL. THE TEMPORARY SHORING PLAN SHALL BE DESIGNED AND CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF IOWA. THE CONTRACTOR SHALL SUBMIT 6 COPIES OF PLANS FOR TEMPORARY SHORING. THE ENGINEER WILL BE ALLOWED 30 CALENDAR DAYS TO REVIEW THE TEMPORARY SHORING PLAN. THE CONTRACTOR SHALL NOT PROCEED WITH INSTALLATION OF THE TEMPORARY SHORING WITHOUT NOTICE TO PROCEED FROM THE ENGINEER.

THE TEMPORARY SHORING SUBMITTAL SHALL INCLUDE:

- DESIGN CALCULATIONS (INCLUDING A GLOBAL STABILITY ANALYSIS)
- SOIL PROPERTIES
- SHORING MATERIAL PROPERTIES
- SHORING PLAN LAYOUT (SHOWING LOCATION OF TRAFFIC)
- SHORING DETAILS

TEMPORARY SHORING SHALL BE PAID FOR AS A LUMP SUM INCLUDING ALL COST FOR DESIGNING, FURNISHING, INSTALLING AND REMOVAL. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. SHORING IS TO BE REMOVED ONLY AFTER BACKFILLING HAS BEEN COMPLETED. IN ADDITION TO THE REQUIREMENTS NOTED ABOVE, ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS STILL APPLIES.

### **Methods Memo No. 91: Temporary Shoring Adjacent to Roadway** **24 March 2005**

Recent questions have been raised about the use of shoring and when it should be required during construction. If shoring is required, when should the plans specify the shoring be designed and sealed by a professional engineer? To help clarify the use of shoring the following guidelines using zones of excavation have been adopted. See also Figure 1. “Temporary Shoring Excavation Classification Line” for details of the temporary shoring limits and zones.

Zone 1: If room is available for the contractor to temporarily slope the embankment back from the edge of shoulder at a minimum slope of 1.5 to 1, then no submittal for shoring is required. For situations where traffic is shifted to the shoulders, consideration should be given to shoring or slope stability. The temporary slope of 1.5:1 is limited to heights of less than 20 ft. (6000 mm) unless a global stability analysis is performed.

Zone 2: When excavation less than 5 ft. (1500 mm) is required adjacent to the roadway, shoring shall be provided by the contractor. Shoring plans will be the responsibility of the contractor and shall be submitted for approval. Plan note E171 shall be used. The degree of formal review will be at the judgment of the RCE.

Zone 3: When excavation 5 ft. (1500 mm) and more is required adjacent to the roadway, shoring shall be required and a professional engineer shall seal the design. The department will review the design and details for approval. Plan note E172 shall be used. The Lump Sum “Temporary Shoring” bid item shall be used.

Also see plan notes E171 and E172 below and a flow chart for the approval process.



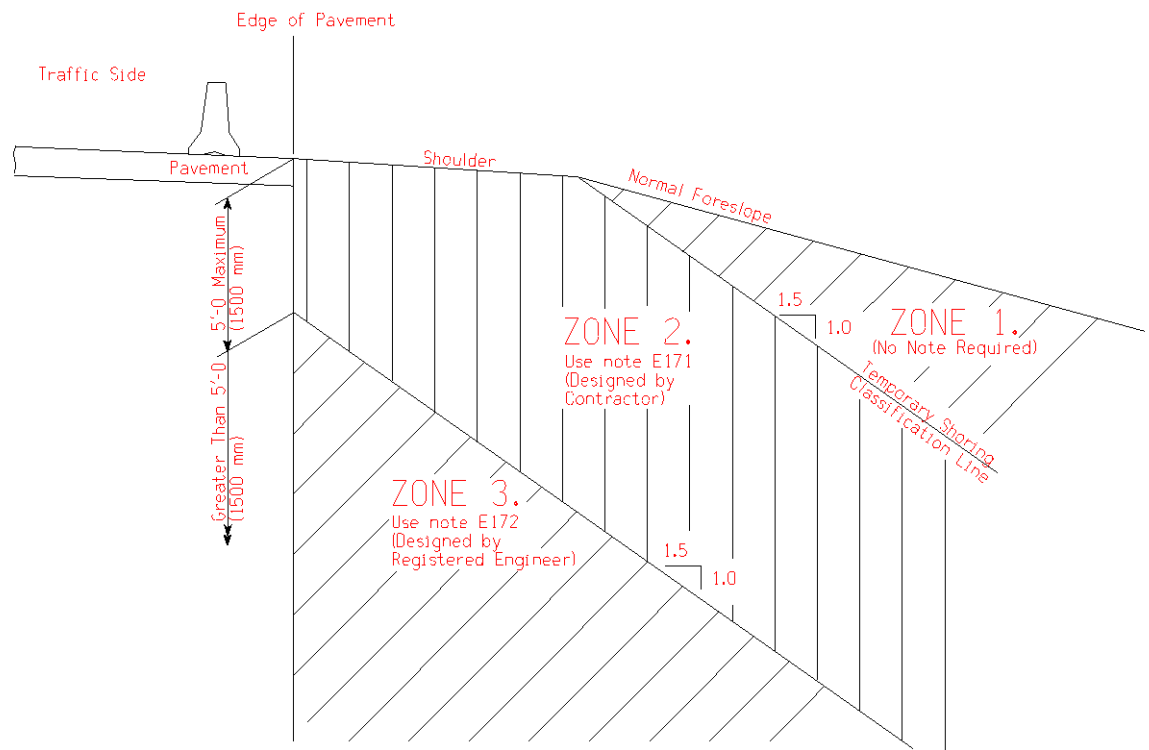


Figure 1. Temporary Shoring Excavation Classification Line

#### **E171/M171: Earth retention, temporary shoring**

THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING (SHEET PILE OR OTHER) TO PREVENT THE EARTH UNDER THE TRAFFIC LANE, FROM SLOUGHING IN DURING CONSTRUCTION. ALL COST OF SHORING, WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO DIRECT PAYMENT WILL BE MADE. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. SHORING IS TO BE REMOVED ONLY AFTER BACKFILLING HAS BEEN COMPLETED. THE CONTRACTOR SHALL SUBMIT SHORING PLANS FOR REVIEW.

Use this note when excavation in Zone 2 is required.

Staged construction may require excavation very close to a traffic lane and temporary embankment support (shoring) may be necessary to safely maintain traffic. The plans shall require the Contractor to provide adequate shoring and the details shall be reviewed and approved by the Engineer.

This note will need to be modified to accommodate specific job situations such as type of structure, embankment location, etc.

For situations where traffic is shifted to the shoulders, consideration should be given to shoring or slope stability. The temporary slope of 1.5:1 is limited to fill heights of less than 20 ft. (6 m) unless a global stability analysis is performed.

#### **E172/M172: Earth retention, temporary shoring, PE required**

TEMPORARY SHORING (SHEET PILE OR OTHER) SHALL BE REQUIRED AS NECESSARY TO PREVENT THE EARTH UNDER THE TRAFFIC LANE FROM SLOUGHING IN DURING CONSTRUCTION.

THE CONTRACTOR SHALL SUBMIT A TEMPORARY SHORING PLAN TO THE ENGINEER FOR APPROVAL. THE TEMPORARY SHORING PLAN SHALL BE DESIGNED AND CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF IOWA. THE CONTRACTOR SHALL SUBMIT 6 COPIES OF PLANS FOR TEMPORARY SHORING. THE ENGINEER WILL BE ALLOWED 30 CALENDAR DAYS TO REVIEW THE TEMPORARY SHORING PLAN. THE CONTRACTOR SHALL NOT PROCEED WITH INSTALLATION OF THE TEMPORARY SHORING WITHOUT NOTICE TO PROCEED FROM THE ENGINEER.

THE TEMPORARY SHORING SUBMITTAL SHALL INCLUDE:

- DESIGN CALCULATIONS (INCLUDING A GLOBAL STABILITY ANALYSIS)
- SOIL PROPERTIES
- SHORING MATERIAL PROPERTIES
- SHORING PLAN LAYOUT (SHOWING LOCATION OF TRAFFIC)
- SHORING DETAILS

TEMPORARY SHORING SHALL BE PAID FOR AS A LUMP SUM INCLUDING ALL COST FOR DESIGNING, FURNISHING, INSTALLING AND REMOVAL. ALL MATERIAL USED FOR SHORING SHALL REMAIN THE PROPERTY OF THE CONTRACTOR. SHORING IS TO BE REMOVED ONLY AFTER BACKFILLING HAS BEEN COMPLETED.

Use this note when excavation is in Zone 3. The following lump sum bid item are to be used for temporary shoring when note E172 is used.

2501-8400172	Temporary Shoring	LS	(English)
2501--321011	Temporary Shoring	LS	(Metric)

The contractor will be paid a lump sum contract price for temporary shoring. This payment shall be full compensation for all costs associated with designing, furnishing, installing and removing the temporary shoring.

Design and review of the temporary shoring is based on the AASHTO Guide Design Specification for Bridge Temporary Works.

The Design Office, Soils Section, should be the first to review the temporary shoring plans submitted. The Soils Section will review the contractor's soils assumption and the applied load generated. The Office of Bridges and Structures will then review the shoring system to verify the loads do not exceed the allowable stresses on the temporary shoring system and will check for adequacy of the details. See figure 2 for a flowchart of the temporary shoring plan review.

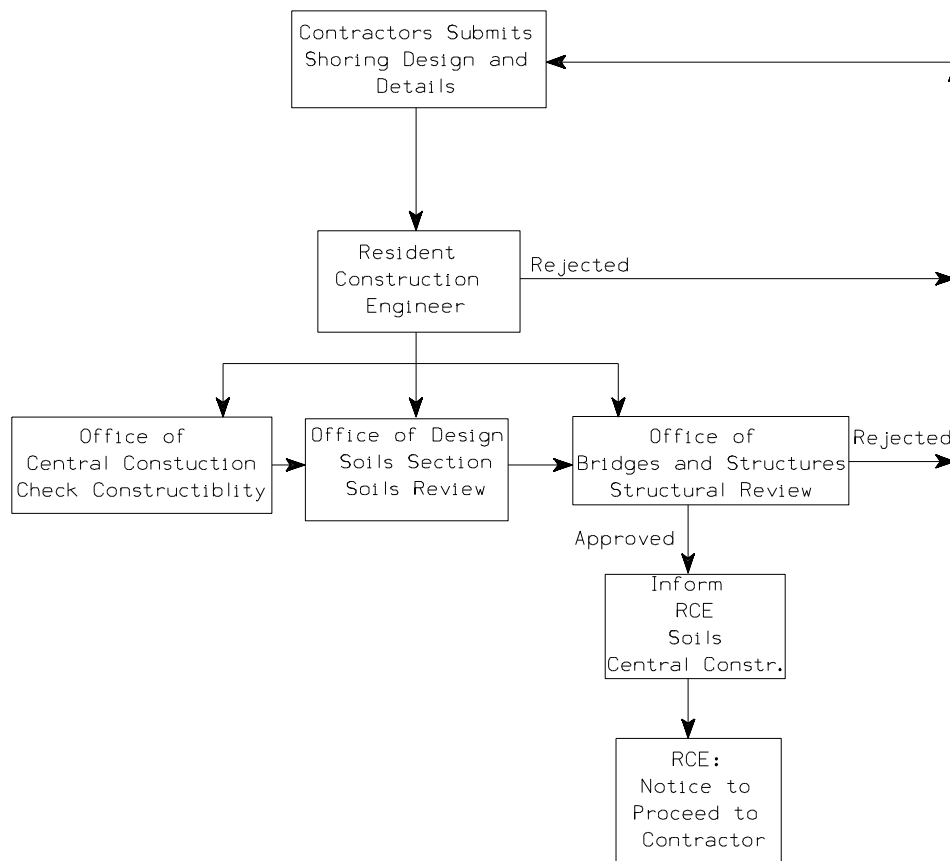


Figure 2 - Temporary Shoring Plan Review Flowchart for Zone 3 approval

**Methods Memo No. 140: New Plan Note E175/M175, “Waiting Period for Driving Piles”  
2 November 2005**

The following note has been added to the CADD cell library. Please review the commentary after the note for correct usage. This note should be used on all bridge plans where required, which have not been turned in.

**E175/M175**

ABUTMENT PILES SHALL NOT BE DRIVEN FOR A MINIMUM OF ?? DAYS FOLLOWING COMPLETION OF APPROACH FILLS. THE TIME PERIOD BETWEEN COMPLETION OF FILLS AND DRIVING PILES MAY BE CHANGED AS ORDERED BY THE ENGINEER BASED UPON REVIEW OF SETTLEMENT PLATES.

**Commentary:**

This note shall be used in situations where new berms are being constructed and settlement is an issue. The number of days used in the note will be based on recommendations from the Soils Section of the Office of Design. Typical delay periods range from 90 to 180 days; however, longer or shorter periods are possible.

**Methods Memo No. 150: Revision to CADD Note E188/M188**

**9 March 2006 (This memo supersedes Methods Memo No. 110, which has been placed in the appendix for the commentary to 5.8.1 Railings. Article 2513.03B was replaced with Article 2513.03, A, 2, in the 2009 Standard Specifications. ~ 17 June 2009)**

A policy change has been made regarding concrete mixes for concrete bridge barrier rails. Class D mix will no longer be allowed for cast-in-place barrier rails in addition to the current policy that does not allow the mix to be used with slipformed rails. CADD note E188/M188 has been updated as shown below to reflect this change.

**E188/M188: Concrete barrier rails, slipform method, concrete class**

CONCRETE BARRIER RAILS PLACED USING THE SLIPFORM METHOD WILL REQUIRE THE USE OF A CLASS BR CONCRETE IN ACCORDANCE WITH ARTICLE **2513.03, A, 2**, OF THE STANDARD SPECIFICATION. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS (CAST-IN-PLACE OR SLIPFORMED METHOD).

Due to quality issues contractors no longer have the option of Class D concrete for placement of barrier rails by the slipform or cast-in-place method [OBS MM No. 110 and 150]. **(Note that Methods Memo No. 150 supersedes Methods Memo No. 110, which has been placed in the appendix to the commentary for 5.8.1 Railings.)**

In addition the following note (EST139/MST139) in the bid item reference information has been updated:

“IF PLACEMENT OF CONCRETE IS DONE BY THE SLIPFORMING METHOD, CLASS BR CONCRETE IS REQUIRED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. PRICE BID FOR THIS ITEM SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS IF REQUIRED FOR PLACEMENT OF THE CONCRETE.”

Incorporate the above notes into appropriate bridge plans effective immediately.

**Methods Memo No. 189: Revision to CADD Note E189/M189 (This memo supersedes MM No. 129, which has been moved to the appendix for this section of the commentary.)**

**1 March 2008**

The following CADD note has been revised.

Electronic copies are available in the following Office of Bridges and Structures standard directory W:\Highway\Bridge\Standards\Bridges and on the Internet:

**<http://www.dot.state.ia.us/bridge/standard.htm>**

The table was revised to fit the plan note sheets more efficiently.

**E189: Reinforcing, English designation on plans**

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 is 5/8 inch diameter bar). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING “BAR DESIGNATION”. THE “BAR DESIGNATION” IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE:	3	4	5	6	7	8	9	10	11
---------------	---	---	---	---	---	---	---	----	----

BAR DESIGNATION:	10	13	16	19	22	25	29	32	36
---------------------	----	----	----	----	----	----	----	----	----

**M189: Reinforcing, Metric designation on plans**

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH “HARD METRIC SIZE”. THESE “HARD METRIC SIZE” BARS ARE NOT AVAILABLE. CURRENTLY THE INDUSTRY IS FURNISHING REINFORCING BARS WITH A “SOFT METRIC BAR DESIGNATION”. ALL “HARD METRIC SIZE” REBARS SHALL BE CONVERTED TO REBAR WITH THE NOTED “SOFT METRIC BAR DESIGNATION”. THE SPACING OR PATTERN OF BAR PLACEMENT SHALL BE AS SHOWN IN THESE PLANS, AND NO CHANGES IN THE SPACING OR THE PATTERN WILL BE ALLOWED WITH THE SUBSTITUTION.

THE “SOFT METRIC BAR DESIGNATION” IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ALL REINFORCING BARS SHOWN ON THE PRESTRESSED CONCRETE BEAM DETAIL SHEETS ARE LABELLED WITH BAR NOTATIONS CONSISTENT WITH THE “SOFT METRIC BAR DESIGNATION” SHOWN IN THE TABLE BELOW AND NO CONVERSION FROM HARD METRIC SIZE IS REQUIRED.

HARD METRIC SIZE:	*	10	15	20	*	25	*	30	35
SOFT METRIC BAR DESIGNATION:	10	13	16	19	22	25	29	32	36

\*NO EQUIVALENT “HARD METRIC SIZE”

If you have any questions on the updated sheets, please check with Thayne Sorenson or Dean Bierwagen.

**Methods Memo No. 197: Embedded Deck Hanger Forms in PPCB**  
**1 May 2008**

CADD note E/M 202 has been revised as follows:

**E 202**

IF DECK HANGERS ARE EMBEDDED IN PRESTRESSED CONCRETE BEAMS, THEY SHALL BE COATED USING ONE OF THE FOLLOWING METHODS:

1. ELECTROPLATING IN ACCORDANCE WITH ASTM B633, SERVICE CONDITION SC4, REQUIRED COATING THICKNESS OF 1.0 MIL. CLASSIFICATION AND COATING SUFFIX: Fe/Zn 25
2. MECHANICAL GALVANIZING IN ACCORDANCE WITH ASTM B695, TYPE 1, CLASS 50. MINIMUM COATING THICKNESS SHALL BE 2 MILS.

**M 202**

IF DECK HANGERS ARE EMBEDDED IN PRESTRESSED CONCRETE BEAMS, THEY SHALL BE COATED USING ONE OF THE FOLLOWING METHODS:

1. ELECTROPLATING IN ACCORDANCE WITH ASTM B633, SERVICE CONDITION SC4, REQUIRED COATING THICKNESS OF 25.0 MICROMETERS. CLASSIFICATION AND COATING SUFFIX: Fe/Zn 25

2. MECHANICAL GALVANIZING IN ACCORDANCE WITH ASTM B695, TYPE 1, CLASS 50. MINIMUM COATING THICKNESS SHALL BE 50 MICROMETERS.

It was found that hot dip galvanizing may not be a viable option for welded components due to concerns of hydrogen embrittlement. In these cases, where steel has been welded and hot dip galvanized there may be detrimental effects on the welds as well as on the inserts. A pre-treatment and a post treatment of the steel for the purpose of reducing the risk of hydrogen embrittlement are available but are very costly and there are no assurances that either of these treatments can be properly performed. Therefore, the note E/M 202 was revised to allow two other coating methods.

This revision should be made to all prestressed concrete bridge projects that have not yet been turned in. If you have any questions please check with me.

**Methods Memo No. 156: Revised Longitudinal Grooving Notes (This memo partially supersedes MM No. 143.)**  
**4 January 2007**

The plan notes currently used for longitudinal grooving have now been included in the current General Supplemental 11, article 2412.06A (effective October 17, 2006). For projects currently being developed, the longitudinal grooving notes should not be included in the bridge plans except when the longitudinal grooving quantities are included in road design's paving plans. Therefore, Bridge notes E207/M207, E209/M209 have been voided and notes E205/M205, E206/M206, and E208/M208 revised as shown below.

The Office of Bridges and Structures policy of using longitudinal grooving and the coordinating with Design as noted in the Bridge Design Manual, article 5.2.4.1.2 shall remain the same. If you have any questions, check with Dean Bierwagen or me.

**E205/M205: Longitudinal grooving, paving by others**

LONGITUDINAL GROOVING WILL NOT BE A PART OF THE BRIDGE PROJECT, BUT WILL BE DONE BY OTHERS PRIOR TO OPENING THE BRIDGE TO TRAFFIC.

When bridge decks (and bridge approaches) are a separate contract, and will be followed by a paving contract responsible for opening the road to traffic, the designer shall calculate the quantity of longitudinal grooving necessary for the bridge deck for inclusion in the paving plan. This quantity shall be forwarded to the Office of Design for their use in developing quantities for the paving project. Remind the Office of Design that our quantity is only for the bridge deck and they will need to calculate the quantity for the approach sections. Note the Design Section will have information about the approaches because they will be included in the paving plan or they had developed them for inclusion in our bridge plan.

**E206/M206: Longitudinal grooving, is in a tied project**

LONGITUDINAL GROOVING WILL NOT BE A PART OF THIS PROJECT, BUT WILL BE INCLUDED IN ANOTHER PROJECT ASSOCIATED WITH THIS CONTRACT.

Prior to using this note, the designer shall verify with the Office of Contracts that the projects will be tied.

**E208/M208: Longitudinal grooving, high performance concrete or improved durability concrete**

THE DEVELOPMENTAL SPECIFICATION, DS-\_\_\_\_\_, FOR \_\_\_\_\_ INCLUDES REFERENCE TO A BID ITEM FOR "LONGITUDINAL GROOVING IN CONCRETE". AS

NOTED IN THIS PLAN, THIS BID ITEM IS NOT PART OF THE BRIDGE PROJECT, BUT WILL BE DONE BY OTHERS.

When bridge plans specify the use of high performance concrete (HPC), Developmental Specification DS-1033, or improved durability concrete (IDC), Developmental Specification DS-1030, the plan shall make reference to the appropriate developmental specification. This developmental specification refers to the bid item "Longitudinal Grooving in Concrete".

If the bridge project will not include this bid item, based on the cases stated in E205/M205, CADD Note E208/M208 shall be placed in the bridge plans.

**Methods Memo No. 143: Longitudinal Grooving for Bridge Decks, Bridge Approaches, Bridge Deck Overlays, & Overlay of Bridge Approaches (This memo supersedes MM No. 128 and 118, which have been placed in the appendix for this commentary section.)**  
**23 November 2005**

Currently the Bridge Office includes a bid item for longitudinal grooving of the bridge decks in the bridge Estimate of Quantities. The Bridge Office also places a note in the plan, E/M 202 (See Attachment A), which overrides the standard specification concerning transverse tining of the bridge deck. The note describes the parameters for the longitudinal grooving. Due to coordination issues with the Office of Design involving the timing of approach pavement placement and any additional paving operation, a revised policy for plan preparation has been developed.

The Bridge Office will continue to require the cutting of longitudinal grooves in the hardened concrete of the bridge decks. Transverse tining will not be allowed. The longitudinal grooving will also be extended to include bridge approach sections, bridge deck overlays, and any PC overlay of bridge approaches. The limits of grooving in the bridge approach will be the same width as the bridge deck (i.e.: 2 foot shy of the gutter line **Note: In mid-2008 this dimension was changed to 18 inches.**) for the double reinforced approach panel. The rest of the bridge approach pavement will have the longitudinal grooves cut in the 12 foot wide lanes only (i.e.: 23 foot wide on a typical two-lane roadway [6 inches shy of the edge of traveled way] ) and the grooving will terminate 6 inches from any bridge joint.

The Office of Design will provide a Standard Tabulation to be included with their road plans which documents quantities involved for bidding (See Attachment B). As a result, the Office of Bridges & Structures will no longer be including a bid item for longitudinal grooving in the bridge Estimate of Quantities. The notes describing the longitudinal grooving parameters (See Attachment "C") will also be included in the roadway plan details until the Standard Specifications are updated to include this information.

Bridge notes E/M 202, 203, and 204 will no longer be used. The notes documented in this Methods memo will replace these bridge notes.

Coordination of this item with the Office of Design is necessary. For most bridge plans it will be the responsibility of the Office of Bridges & Structures to provide the Office of Design with the area of the bridge deck, bridge approaches, bridge deck overlays, and overlay of bridge approaches to be grooved.

The following Cases (I, II, and III) define how longitudinal grooving will be addressed as a result of packaging of the bridge and roadway work. The notes address typical bridge decks and bridge floor overlays, bridge approaches, and overlay of bridge approaches. Two course bridge decks will be addressed on a case-by-case basis.

**Case I: Some or all the paving required to open this bridge to traffic is to be done by others. (Bridge will not be opened to traffic until additional contracts have been completed, which will then allow traffic access to the structure.)**

When bridge decks (and bridge approaches) are a separate contract, but will be followed by a paving contract responsible for opening the road to traffic, the Bridge Office shall calculate the quantity of longitudinal grooving necessary for the bridge project (i.e.: bridge deck only or bridge deck and approach pavement if the bridge plans include a bridge approach section) for inclusion in the paving plan. This quantity shall be forwarded to the Office of Design for their use in developing quantities for the paving project. Be specific in the information describing the bridge involved and how much grooving is for the bridge deck and how much for the bridge approach section.

The bridge plans shall include the following note: E/M 205

TRANSVERSE GROOVING OR TINIING IN THE PLASTIC CONCRETE OF THE BRIDGE DECK (AND BRIDGE APPROACH SECTIONS) IS NOT ALLOWED. LONGITUDINAL GROOVES WILL BE CUT IN THE HARDENED CONCRETE USING A MECHANICAL CUTTING DEVICE. LONGITUDINAL GROOVING WILL NOT BE A PART OF THIS CONTRACT, BUT WILL BE DONE BY OTHERS PRIOR TO OPENING THE BRIDGE TO TRAFFIC.

**Case II: All paving necessary to open the bridge to traffic is included in the bridge contract. (Bridge will be opened to traffic upon completion of the Contract.)**

When the contract includes bridge decks, bridge approaches and paving operations, which will result in opening the bridge to traffic, the Bridge Office shall calculate the quantity of longitudinal grooving necessary for the bridge deck. This quantity shall be forwarded to the Office of Design for their use in developing quantities for the roadway portion of the project (including paving details). Note: the Office of Design will calculate the quantity for longitudinal grooving of the bridge approach since they will be developing the bridge approach details and the bridge office will not typically see these details until the total road design package is submitted to the bridge office for review and final turn in to the Office of Contracts.

The bridge plans shall include the following note: E/M 206

TRANSVERSE GROOVING OR TINIING IN THE PLASTIC CONCRETE OF THE BRIDGE DECK AND BRIDGE APPROACH SECTIONS IS NOT ALLOWED. LONGITUDINAL GROOVES WILL BE CUT IN THE HARDENED CONCRETE USING A MECHANICAL CUTTING DEVICE. THE BID ITEM FOR "LONGITUDINAL GROOVING IN CONCRETE" IS A PART OF THIS CONTRACT AND WILL BE INCLUDED IN THE ROADWAY QUANTITIES ASSOCIATED WITH THIS CONTRACT.

**Case III: Existing Bridges requiring redecking or overlays**

When bridge decks and bridges approaches are in a project where the paving exists or the existing road is not hard surfaced and the road is not planned for replacement/resurfacing, it is assumed the contract will involve all bridge and roadway work including any bridge approach pavement. In this case the Bridge Office shall calculate the quantity of longitudinal grooving necessary for the bridge deck. This quantity shall be forwarded to the Office of Design for their use in developing quantities for the roadway portion or the project. See note above concerning the calculation of grooving for the approach pavement.

The bridge plans shall include the following note: E/M 207

TRANSVERSE GROOVING OR TINIING IN THE PLASTIC CONCRETE OF THE BRIDGE DECK (BRIDGE DECK OVERLAY) AND BRIDGE APPROACH SECTIONS (OVERLAY OF THE BRIDGE APPROACH) IS NOT ALLOWED. LONGITUDINAL GROOVES WILL BE CUT IN THE HARDENED CONCRETE USING A MECHANICAL CUTTING DEVICE. THE BID ITEM FOR "LONGITUDINAL GROOVING IN CONCRETE" IS PART OF THIS CONTRACT AND WILL BE INCLUDED IN THE ROADWAY QUANTITIES ASSOCIATED WITH THIS CONTRACT.



*The following cases (A and B) define special circumstances involving longitudinal grooving of the bridge deck.*

**Case A: Bridge Decks Using High Performance Concrete or Improved Durability Concrete**

When bridge plans specify the use of High Performance Concrete (Developmental Specification DS-1033) or Improved Durability Concrete (Developmental Specification DS-1030) the plan shall make reference to the appropriate Developmental Specification. This Developmental Specification refers to the bid item "Longitudinal Grooving in Concrete".

If the bridge project will not include this bid item, based on the cases stated above, the following plan note shall be placed in the bridge plans: E/M 208

THE DEVELOPMENTAL SPECIFICATION, DS-\_\_\_\_\_, FOR \_\_\_\_\_ INCLUDES REFERENCE TO A BID ITEM FOR "LONGITUDINAL GROOVING IN CONCRETE". AS NOTED IN THIS PLAN, THIS BID ITEM IS NOT PART OF THE BRIDGE PROJECT, BUT WILL BE DONE BY OTHERS.

**Case B: Interim Coarse Broom Texture On Stage Bridge Projects**

For staged bridge projects the contractor will be allowed the option to provide an interim coarse broom texture to the bridge deck, bridge deck overlay, bridge approach, and overlay of bridge approach. This will allow the contractor to mobilize the equipment for cutting longitudinal grooving only one time at the completion of all stages in lieu of mobilizing the equipment at the completion of each stage of the project.

Bridge plans shall include the following notes: E/M 209

THE CONTRACTOR WILL HAVE THE OPTION OF CUTTING LONGITUDINAL GROOVES IN THE HARDENED CONCRETE AT THE END OF EACH STAGE OF CONSTRUCTION OR WAITING UNTIL ALL STAGES HAVE BEEN COMPLETED. IF THE CONTRACTOR ELECTS TO DELAY CUTTING OF THE LONGITUDINAL GROOVES UNTIL COMPLETION OF ALL STAGES, THE CONCRETE DECK/OVERLAY SURFACE FOR ANY STAGE OPENED TO TRAFFIC SHALL RECEIVE AN INTERIM COARSE BROOM FINISH DURING PLACEMENT.

WITHIN 30 CALENDAR DAYS FOLLOWING COMPLETION OF THE LAST STAGE OF THE PROJECT, THE CONTRACTOR WILL BE REQUIRED TO ESTABLISH TEMPORARY LANE CLOSURES TO ACCOMPLISH LONGITUDINAL GROOVING FOR ALL STAGES. COST OF THE TEMPORARY LANE CLOSURES IS TO BE INCLUDED IN THE PRICE BID FOR "TRAFFIC CONTROL". THE INTERIM BROOM FINISH WILL NOT BE ALLOWED AS A SURFACE TEXTURE WHEN OPENED TO TRAFFIC OVER A WINTER SEASON. IF THE INTERIM COARSE BROOM TEXTURE IS PRESENT AND THE CONTRACTOR IS NOT IN A POSITION TO FINISH ALL STAGES OF THE PROJECT, LONGITUDINAL GROOVING WILL BE CUT INTO THE HARDENED CONCRETE IN ORDER TO ESTABLISH AN ACCEPTABLE DRIVING SURFACE TEXTURE FOR THE WINTER SEASON.

Sometimes an area of the bridge deck will have roadway traffic during staging and become a sidewalk surface in the final cross section. In this case, do not give the contractor the option to cut longitudinal grooves in the portion of the bridge deck which will eventually be the sidewalk, but require the use of the interim coarse broom finish in that stage.

The Office of Design will prepare the traffic control plan. This plan will include appropriate road standards to address the traffic control requirements in the event the contractor elects to do longitudinal grooving after all stages of the project is complete. These would generally include RS-3, RS-63A and RS-63B, or RS-64A and RS-64B. In addition, the staging notes or traffic control notes for staged projects should include the following note "For staged bridge projects, the contractor will be allowed the option to provide

an interim coarse broom texture to the bridge deck, bridge deck overlay, bridge approach and overlay of bridge approach. If the contractor elects this option to reduce mobilization costs, all traffic control required will be incidental to the traffic control bid item."

---

Attachment "A"  
(Voided Bridge Notes)

**E202: Longitudinal grooving, bridge decks**

TRANSVERSE GROOVING OR TINIING IN THE PLASTIC CONCRETE OF THE BRIDGE DECK OR BRIDGE FLOOR OVERLAY WILL NOT BE ALLOWED. LONGITUDINAL GROOVES SHALL BE CUT INTO THE HARDENED CONCRETE SURFACES USING A MECHANICAL CUTTING DEVICE. LONGITUDINAL GROOVING SHALL BE DONE AFTER ANY SURFACE CORRECTION GRINDING IS DONE AND BEFORE TRAFFIC IS ALLOWED ON THE SURFACE. EACH GROOVE SHALL BE 1/8 INCH  $\pm$  1/64 INCH IN WIDTH, 1/8 INCH  $\pm$  1/32 INCH OR - 1/16 INCH IN DEPTH, AND THE GROOVES SHALL BE UNIFORMLY SPACED AT 3/4 INCH INTERVALS MEASURED FROM CENTER OF GROOVE TO CENTER OF GROOVE. LONGITUDINAL GROOVING SHALL NOT BE WITHIN THE AREA APPROXIMATELY 2 FEET ADJACENT TO THE CURBS AND SHALL TERMINATE APPROXIMATELY 6 INCHES FROM ANY JOINTS. THE QUANTITY OF LONGITUDINAL GROOVING IN CONCRETE, IN SQUARE YARDS, WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE FOR LONGITUDINAL GROOVING IN CONCRETE PER SQUARE YARD.

Provide this note along with the bid item "Longitudinal Grooving in Concrete" [Notes in OBS MM No. 128 supersede notes in OBS MM No. 118].

**M202: Longitudinal grooving, bridge decks**

TRANSVERSE GROOVING OR TINIING IN THE PLASTIC CONCRETE OF THE BRIDGE DECK OR BRIDGE FLOOR OVERLAY WILL NOT BE ALLOWED. LONGITUDINAL GROOVES SHALL BE CUT INTO THE HARDENED CONCRETE SURFACES USING A MECHANICAL CUTTING DEVICE. LONGITUDINAL GROOVING SHALL BE DONE AFTER ANY SURFACE CORRECTION GRINDING IS DONE AND BEFORE TRAFFIC IS ALLOWED ON THE SURFACE. EACH GROOVE SHALL BE 3 mm  $\pm$  0.5 mm IN WIDTH, 3 mm  $\pm$  1 mm OR - 1.5 mm IN DEPTH, AND THE GROOVES SHALL BE UNIFORMLY SPACED AT 20 mm INTERVALS MEASURED FROM CENTER OF GROOVE TO CENTER OF GROOVE. LONGITUDINAL GROOVING SHALL NOT BE WITHIN THE AREA APPROXIMATELY 600 mm ADJACENT TO THE CURBS AND SHALL TERMINATE APPROXIMATELY 150 mm FROM ANY JOINTS. THE QUANTITY OF LONGITUDINAL GROOVING IN CONCRETE, IN SQUARE METERS, WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE FOR LONGITUDINAL GROOVING IN CONCRETE PER SQUARE METER.

Provide this note along with the bid item "Longitudinal Grooving in Concrete" [Notes in OBS MM No. 128 supersede notes in OBS MM No. 118].

**E203/M203: Longitudinal grooving, paving contractor, improved durability concrete**

LONGITUDINAL GROOVING OF THE BRIDGE DECK WILL BE DONE BY THE PAVING CONTRACTOR. THEREFORE, THE PORTION OF DEVELOPMENTAL SPECIFICATION FOR IMPROVED DURABILITY CONCRETE FOR BRIDGE DECKS CONCERNING THE GROOVING IS NOT APPLICABLE.

Provide this note if the bridge deck is constructed with improved durability concrete and the District decides to include the grooving in the paving plan rather than the bridge plan [OBS MM No. 121].

**E204/M204: Longitudinal grooving, paving contractor, high performance concrete**

LONGITUDINAL GROOVING OF THE BRIDGE DECK WILL BE DONE BY THE PAVING CONTRACTOR. THEREFORE, THE PORTION OF THE DEVELOPMENTAL SPECIFICATION FOR HIGH PERFORMANCE CONCRETE FOR BRIDGE DECKS CONCERNING THE GROOVING IS NOT APPLICABLE.

Provide this note if the bridge deck is constructed with high performance concrete and the District decides to include the grooving in the paving plan rather than the bridge plan [OBS MM No. 121].

Attachment "B"  
(New Roadway Tabulation for Longitudinal Grooving)

LONGITUDINAL GROOVING		100-28
See Standard Note 223-24		04-18-06
Location	Total Sq. Yds.	Remarks

Attachment "C"

(New Roadway Note for Longitudinal Grooving Parameters)

**Note that in mid-2008 the extent of grooving was changed from 2 feet to 18 inches from the gutter line.**

04-18-06

223-24

Transverse grooving or tining in the plastic concrete of the bridge deck, bridge floor overlay, or bridge approach section will not be allowed. Longitudinal grooves shall be cut into the hardened concrete surfaces using a mechanical cutting device. Longitudinal grooving shall be done after any surface correction grinding is complete and before traffic is allowed on the surface except as noted for staged construction. Each groove shall be  $1/8$  inch  $\pm$   $1/64$  inch in width,  $1/8$  inch  $+ 1/32$  inch or  $-1/16$  inch in depth, and the grooves shall be uniformly spaced at  $3/4$  inch intervals measured from center of groove to center of groove. Longitudinal grooving shall terminate approximately 6 inches from any bridge joints or expansion joints. On the bridge deck and on curbed areas of the approach pavement, grooving shall terminate approximately 2 feet from the gutter line. On areas of the approach pavement without curbs, grooving shall terminate approximately 6 inches inside the edge of the traveled way.

The quantity of longitudinal grooving in concrete, in square yards, will be the quantity shown in the contract documents. The contractor will be paid the contract unit price for longitudinal grooving in concrete per square yard.

**Methods Memo No. 121: Use of Special Concrete Mixes on Bridges**  
8 July 2005

See C5.2.4.1.1.2.

**Methods Memo No. 187: Void CADD Note E923/M923**  
1 January 2008

CADD note E923/M923 has been voided from the CADD directory. For new bridge construction where two course decks are used, CADD note E234/M234 should be used. If you have any questions, please check with Thayne Sorenson or Dean Bierwagen.

**Methods Memo No. 177: CADD Note E234/M234 for Surface Preparation for Two Course Decks  
1 October 2007**

The following CADD note E234/M234 has been issued for use with two course decks for new bridges.

**E234**

NO CURING COMPOUNDS SHALL BE USED ON THE SURFACE OF THE CONCRETE DECK (FIRST COURSE).

THE SURFACE OF THE FIRST COURSE SHALL BE INTENTIONALLY ROUGHENED (COMBED) TO A MINIMUM DEPTH OF 1/8" AND A MAXIMUM DEPTH OF 1/4". THIS ROUGHENED SURFACE SHALL BE ACCOMPLISHED ON PLASTIC CONCRETE BY USE OF A MECHANICAL DEVICE AS PRESCRIBED IN ARTICLE 2301.16 OR ON HARDENED CONCRETE BY UNIFORMLY SCARIFYING THE ENTIRE DECK AREA. THE INTENT IS TO GIVE THE CONTRACTOR THE OPTION OF ACHIEVING THE REQUIRED SURFACE ROUGHNESS ON THE PLASTIC OR HARDENED CONCRETE SO THE SECOND COURSE WILL BOND PROPERLY.

**M234**

NO CURING COMPOUNDS SHALL BE USED ON TOP SURFACE OF THE CONCRETE DECK (FIRST COURSE).

THE SURFACE OF THE FIRST COURSE SHALL BE INTENTIONALLY ROUGHENED (COMBED) TO A MINIMUM DEPTH OF 3 mm AND A MAXIMUM DEPTH OF 6 mm. THIS ROUGHENED SURFACE SHALL BE ACCOMPLISHED ON PLASTIC CONCRETE BY USE OF A MECHANICAL DEVICE AS PRESCRIBED IN ARTICLE 2301.16 OR ON HARDENED CONCRETE BY UNIFORMLY SCARIFYING THE ENTIRE DECK AREA. THE INTENT IS TO GIVE THE CONTRACTOR THE OPTION OF ACHIEVING THE REQUIRED SURFACE ROUGHNESS ON THE PLASTIC OR HARDENED CONCRETE SO THE SECOND COURSE WILL BOND PROPERLY.

Commentary

This note should be used with two course decks for new bridges. Curing compounds should not be allowed, so the second course will bond properly.

**C11.4 Future notes**

**C11.4.1 Index**

**C11.4.2 Listing**

**C11.5 Bridge repair**

**C11.5.1 Index**

**Methods Memo No. 199: Revision to CADD Note E461/M461**

**1 May 2008**

See C11.5.2.

**Methods Memo No. 206: Revision for E463/M463**

**1 October 2008**

See C11.5.2.

**Methods Memo No. 204: General Note on Keyway Dimensions**

**1 October 2008**

See C11.5.2.

## **C11.5.2 Listing**

**Methods Memo No. 204: General Note on Keyway Dimensions**

**1 October 2008 (October corrections to August memo are in bold type.)**

There has been some confusion in the field on the keyway dimensions for construction joints that are shown on the office's plans, and whether they are based on the **nominal** dimensions (2 x 4) or the **actual** dimensions (1½ x 3½). In addition, questions have been raised on what the allowable bevel should be on the keyway. Contractors generally prefer as much bevel as possible to make it easier to remove the keyway forms after casting. However, the office would like to limit the bevel to provide a better shear **connection** across the joint. Therefore, to make it clear the following general note was developed.

E/M 443

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

Please provide this note on all projects currently being developed. I will be working with the specifications committee to include this issue in the **Iowa DOT "Standard Specifications for Highway and Bridge Construction."** Until the specifications are updated, this note should be used. If you have any questions, please check with Dean Bierwagen or myself.

**Methods Memo No. 183: Policy Regarding Construction Loading**

**1 January 2008**

See C5.5.2.2.6.

**Methods Memo No. 213: Revision to E450/M450 Commentary**

**1 April 2009**

The commentary note for E450/M450 has been revised to provide a better understanding of when the note should be used.

**E450/M450: Approach pavement, new PCC**

THE CONTRACTOR SHALL CONSTRUCT NEW BRIDGE APPROACH PAVEMENT AS NOTED AND SHOWN. THE PRICE BID FOR "BRIDGE APPROACH SECTION, REINFORCED AS PER PLAN" SHALL BE FULL COMPENSATION FOR FURNISHING

AND INSTALLING P.C. CONCRETE APPROACH PAVEMENT, INCLUDING  
EXCAVATION REINFORCING STEEL AND JOINT MATERIAL REQUIRED.

This note should be used for approach slab repair (non-standard) situations where a portion of the approach slab is replaced or where special details or reinforcing is required in the approach slab and shown on the plans.

**Methods Memo No. 199: Revision to CADD Note E461/M461**  
**1 May 2008**

CADD Note E461/M461 has been revised as shown below:

THE TOPS OF THE ABUTMENT BACKWALLS AS SHOWN SHALL BE CONSTRUCTED USING STRUCTURAL CONCRETE CLASS D. PROMPTLY AFTER THE CONCRETE HAS BEEN PLACED AND VIBRATED AS PROVIDED IN ARTICLES 2403.08 AND 2403.09, IT SHALL BE HAND FINISHED TO PROVIDE A SMOOTH SURFACE WITH THE PROPER CROWN. THE CONTRACTOR MAY ELECT TO USE FORMWORK WHICH IS MARKED OR TRIMMED TO THE CORRECT ELEVATION AND CROWN TO PROVIDE THE LIMITS FOR THE HAND FINISHING.

This note is used when a portion of or the entire backwall is being reconstructed.

Generally the top of the abutment backwall is 1'-0 or less in width depending on the type of expansion joint. This is too narrow an area to realistically use any type of vibrator screed. Typically the tops of abutment backwalls are surveyed and closely graded on the formwork. The concrete finishing is performed by vibrating the concrete with 'stinger' vibrators and then the concrete surface is hand float finished. The contractor would not be able to use either a finishing machine or a vibratory screed and achieve as good a grade and finish as he/she can by closely grading the formwork and hand float finishing.

This revision should be made to all backwall repair projects that have not yet been turned in. If you have any questions please check with me.

**Methods Memo No. 206: Revision for E463/M463**  
**1 October 2008 (The note was revised to replace Article 2403.21 with Article 2403.03, P, in the 2009 Standard Specifications. ~ 17 June 2009)**

The note for E463/M463 has been revised as shown to provide a better understanding of what should be sealed on barrier rails that are repaired.

**E463/M463: Concrete sealer, barrier rail**

THE TOP AND INTERIOR FACES OF THE EXISTING CONCRETE RAILING ARE TO BE CLEANED AND SEALED IN ACCORDANCE WITH **ARTICLE 2403.03, P, OF THE STANDARD SPECIFICATION PART D**. IF NEW SECTIONS OF RAIL ARE CONSTRUCTED, THE NEW SECTIONS SHALL NOT BE SEALED. ALL COSTS ASSOCIATED WITH CLEANING AND SEALING OF THE CONCRETE RAILS SHALL BE INCLUDED IN THE UNIT PRICE BID ITEM “ ?? “.

If repair work is being done on a bridge, the field has requested that we apply concrete sealer to the traffic face and top of the existing concrete barrier rails. This should apply when overlays are being applied or when rail end sections are being updated on the structures. Do not seal rails unless other repairs require traffic control for both sides of the bridge.



New concrete barrier rails shall not be sealed. There is concern that the sealant prevents proper curing of the concrete and therefore should not be applied to new concrete surfaces.

The cost of the sealing should be made incidental to a contract item. Examples of bid items in which it could be included are: "Concrete Repair", "Repair Beam Ends", "Bridge Floor Overlay" or "Structural Concrete".

One issue to consider before adding the sealing work to the plans is the condition of the existing barrier rail. If the barrier has severe deterioration, consider whether repairs need to be made first before sealing, or if the sealing is worth the cost.

If you have any question please check with me.

**Methods Memo No. 188: Revisions to CADD Notes E470, M470, E471/M471, and E473/M473  
1 January 2008**

Because of concerns by the Office of Contracts with the use of a proprietary product "Rust-oleum" in the following CADD notes M470/M470, E471/M471, and E473/M473, the notes have been modified as shown below.

**E470: Paint, raise plate on expansion device**

SURFACES OF EXISTING EXPANSION DEVICE ARE TO BE CLEANED OF EXISTING CORROSION AND PAINT IN PREPARATION FOR FIELD WELDING. THE 1 1/2 " THICK RAISE PLATES FOR THE EXPANSION DEVICE ARE TO BE CLEANED AND PAINTED AFTER FIELD WELDING TO THE EXISTING EXPANSION DEVICE. THE CLEANING IS TO BE BY VACUUM BLAST OR BY A NON-BLASTING METHOD AND IS TO COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL SPECIFICATIONS SSPC-SP3. THE EXPOSED TOP SURFACES OF THE COMPLETED EXPANSION DEVICE ARE TO BE GIVEN ONE COAT OF BOTH A RUST INHIBITOR TYPE PRIMER AND FINAL COAT AS APPROVED BY THE ENGINEER. THE COLOR OF THE DRY PAINT SHOULD APPROXIMATE THE COLOR OF CONCRETE. ONLY THE EXPOSED SURFACES OF THE EXPANSION DEVICE AND RAISE PLATES ARE TO BE PAINTED. NO PAINTING OF OTHER STEEL IS REQUIRED. BECAUSE OF THE SMALL QUANTITY, ALL COST ASSOCIATED WITH CLEANING AND PAINTING OF THE EXPANSION DEVICE AS NOTED IS TO BE INCLUDED IN THE BID ITEM "PAINTING STRUCTURAL STEEL".

THE BID ITEM "STRUCTURAL STEEL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLING RAISE PLATES ON EXPANSION DEVICE AS SHOWN EXCEPT ITEMS INCLUDED IN THE BID ITEM "PAINTING STRUCTURAL STEEL" AND THE BID ITEM "CONTAINMENT".

Expand this definition of structural steel when appropriate. Use containment note and scrape test note. See the cleaning and painting article in the bridge design manual [BDM 9.1.9.5.2].

**M470: Paint, raise plate on expansion device**

SURFACES OF EXISTING EXPANSION DEVICE ARE TO BE CLEANED OF EXISTING CORROSION AND PAINT IN PREPARATION FOR FIELD WELDING. THE 40 mm THICK RAISE PLATES FOR THE EXPANSION DEVICE ARE TO BE CLEANED AND PAINTED AFTER FIELD WELDING TO THE EXISTING EXPANSION DEVICE. THE CLEANING IS TO BE BY VACUUM BLAST OR BY A NON-BLASTING METHOD AND IS TO COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL SPECIFICATIONS SSPC-SP3. THE EXPOSED TOP SURFACES OF THE COMPLETED EXPANSION DEVICE ARE TO BE

GIVEN ONE COAT OF BOTH A RUST INHIBITOR TYPE PRIMER AND FINAL COAT AS APPROVED BY THE ENGINEER. THE COLOR OF THE DRY PAINT SHOULD APPROXIMATE THE COLOR OF CONCRETE. ONLY THE EXPOSED SURFACES OF THE EXPANSION DEVICE AND RAISE PLATES ARE TO BE PAINTED. NO PAINTING OF OTHER STEEL IS REQUIRED. BECAUSE OF THE SMALL QUANTITY, ALL COST ASSOCIATED WITH CLEANING AND PAINTING OF THE EXPANSION DEVICE AS NOTED IS TO BE INCLUDED IN THE BID ITEM "PAINTING STRUCTURAL STEEL".

THE BID ITEM "STRUCTURAL STEEL" SHALL INCLUDE ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLING RAISE PLATES ON EXPANSION DEVICE AS SHOWN EXCEPT ITEMS INCLUDED IN THE BID ITEM "PAINTING STRUCTURAL STEEL" AND THE BID ITEM "CONTAINMENT".

Expand this definition of structural steel when appropriate. Use containment note and scrape test note. See the cleaning and painting article in the bridge design manual [BDM 9.1.9.5.2].

#### **E471/M471: Paint, strip seal on sliding plate**

SURFACES OF EXISTING EXPANSION DEVICE AS DETAILED IN THESE PLANS ARE TO BE CLEANED OF EXISTING CORROSION AND PAINT IN PREPARATION FOR FIELD WELDING. THE NEW STEEL EXTRUSION TO BE PAINTED SHALL BE CLEANED AND PAINTED AFTER FIELD WELDING TO THE EXISTING EXPANSION DEVICE. THE CLEANING IS TO BE BY VACUUM BLAST OR BY A NON-BLASTING METHOD AND IS TO COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL SPECIFICATIONS SSPC-SP3. THE EXPOSED SURFACES OF THE COMPLETED EXPANSION DEVICE ARE TO BE GIVEN ONE COAT OF BOTH A RUST INHIBITOR TYPE PRIMER AND FINAL COAT AS APPROVED BY THE ENGINEER. THE COLOR OF THE DRY PAINT SHOULD APPROXIMATE THE COLOR OF CONCRETE. ONLY THOSE SURFACES OF THE EXPANSION DEVICE NOTED TO BE PAINTED ARE TO BE PAINTED. NO PAINTING OF OTHER STRUCTURAL STEEL IS REQUIRED. BECAUSE OF THE SMALL QUANTITY, ALL COST ASSOCIATED WITH CLEANING AND PAINTING OF THE EXPANSION DEVICE AS NOTED IS TO BE INCLUDED IN THE BID ITEM "PAINTING STRUCTURAL STEEL".

THE BID ITEM "STEEL EXTRUSION JOINT WITH NEOPRENE" SHALL INCLUDE ALL COSTS ASSOCIATED WITH FURNISHING AND INSTALLING THE EXPANSION DEVICE AS SHOWN, EXCEPT ITEMS INCLUDED IN THE BID ITEM "PAINTING STRUCTURAL STEEL" AND THE BID ITEM "CONTAINMENT".

Use this note when a strip seal is to be installed on a sliding plate expansion device. The plans should show what is to be painted. Use containment note and scrape test note. See the cleaning and painting article in the bridge design manual [BDM 9.1.9.5.2].

#### **E473/M473: Paint, bearing repainting, concrete bridge**

ABUTMENT BEARINGS (SOLE PLATES AND MASONRY PLATES) ARE TO BE CLEANED AND PAINTED. CLEANING BY VACUUM BLASTING OR BY A NON-BLASTING METHOD IS REQUIRED. SURFACE TO BE PAINTED SHALL BE PREPARED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL (SSPC) SP3. SURFACES OF THE ABUTMENT BEARINGS ARE TO BE GIVEN ONE COAT OF BOTH A RUST INHIBITOR TYPE PRIMER AND FINAL COAT AS APPROVED BY THE ENGINEER. THE COLOR OF THE DRY PAINT SHOULD APPROXIMATE THE COLOR OF CONCRETE. THIS WORK SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER LUMP SUM FOR THE BID ITEM, "PAINTING OF STRUCTURAL STEEL".

This note is to be used on repair of a concrete beam bridge when bearings require painting. Check with the supervising Section Leader or District personnel to see if this should be part of the contract or if the bridge crew can handle the work. Include containment note and scrape test note.

These notes should be replaced on any current set of repair plans that have been detailed. If you have any questions, please check with Thayne Sorenson or Dean Bierwagen.

## **C11.6 Future notes**

### **C11.6.1 Index**

### **C11.6.2 Listing**

## **C11.7 Culvert**

### **C11.7.1 Index**

### **C11.7.2 Listing**

## **C11.8 Bridge substructure**

### **C11.8.1 Index**

**Methods Memo No. 166: Revisions to CADD Notes E832/M832 and Bid Item Reference Note 6 April 2007**

See C11.8.2.

**Methods Memo No. 153: Pile Driving over Waterways 6 April 2007**

See C11.8.2.

### **C11.8.2 Listing**

**Methods Memo No. 166: Revisions to CADD Notes E832/M832 and Bid Item Reference Note 6 April 2007 (The word section was replaced with the word article. ~ 17 June 2009)**

The following CADD notes (E832/M832) have been revised and the bid item reference note (EST141/MST141) added. Please use these updated notes on all projects where the “Excavate and Dewater” bid item is required.

#### **E832: Excavate and dewater, pier footings**

THE LUMP SUM BID ITEM, “EXCAVATE AND DEWATER” SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE EXCAVATION AND DEWATERING REQUIRED TO CONSTRUCT THE PIER FOOTINGS IN THE DRY, IN ACCORDANCE WITH **ARTICLE** 2405 OF THE STANDARD SPECIFICATIONS. THE LENGTH AND WIDTH OF THE SEAL COAT WAS BASED ON THE REQUIRED ONE FOOT CLEARANCE BETWEEN THE TIP OF THE SHEET PILES AND THE BATTERED PILING. THE CONCRETE SEAL COAT, IF

USED, SHALL BE ?? FEET THICK, BASED ON A WATER ELEVATION OF ?. IF THE WATER ELEVATION IS HIGHER THAN ? AT THE TIME OF CONSTRUCTION, A LARGER SEAL COAT MAY BE REQUIRED TO MAINTAIN THE CLEARANCE BETWEEN THE SHEET PILES AND BATTERED PILING. THE BRIDGE ENGINEER SHALL BE NOTIFIED BEFORE USING A LARGER SEAL COAT.

Use this note when the "Excavate and Dewater" bid item is used. See article 6.6.4.1.4 Seal Coat of the Bridge Design Manual for additional information.

**M832: Excavate and dewater, pier footings**

THE LUMP SUM BID ITEM, "EXCAVATE AND DEWATER" SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE EXCAVATION AND DEWATERING REQUIRED TO CONSTRUCT THE PIER FOOTINGS IN THE DRY, IN ACCORDANCE WITH **ARTICLE 2405** OF THE STANDARD SPECIFICATIONS. THE LENGTH AND WIDTH OF THE SEAL COAT WAS BASED ON THE REQUIRED 300 mm CLEARANCE BETWEEN THE TIP OF THE SHEET PILES AND THE BATTERED PILING. THE CONCRETE SEAL COAT, IF USED, SHALL BE ?? METERS THICK, BASED ON A WATER ELEVATION OF ?. IF THE WATER ELEVATION IS HIGHER THAN ? AT THE TIME OF CONSTRUCTION, A LARGER SEAL COAT MAY BE REQUIRED TO MAINTAIN THE CLEARANCE BETWEEN THE SHEET PILES AND BATTERED PILING. THE BRIDGE ENGINEER SHALL BE NOTIFIED BEFORE USING A LARGER SEAL COAT.

**EST141/MST141**

"FOR PIERS IN ACCORDANCE WITH ARTICLE 2405 OF THE STANDARD SPECIFICATIONS."THE DESIGN IS BASED ON SEAL COAT DIMENSIONS OF ? X ? X ?."

**Methods Memo No. 117: Pile Cutoff for Battered Piles  
20 July 2005**

See C6.2.5.

**Methods Memo No. 153: Pile Driving over Waterways  
6 April 2007 (In the manual the note was split into two notes so that the metric note would have correct units 24 November 2009.)**

When designing piers supporting bridges over waterways, current design practice is not to count skin friction through layers above the computed 100 year scour elevation, and to develop the required design bearing for the piles below this elevation. Currently, no mention is made in the substructure notes of the driving resistance that will be encountered in these scourable layers at the time the piles are driven. According to Kyle Frame in the construction office, he is taking this additional driving resistance into account when he makes the driving charts for projects over waterways.

To clarify the intentions of our design for the field and to alleviate the need for the construction office to adjust the design bearing value given in our plans, we will now be including the driving resistance through the scourable soil layers on our plans in a fashion similar to the driving resistance listed for abutment piles with downdrag by using the following note:

**E834/M834: Pile Driving Note Over Waterways**

PIER PILES ARE DESIGNED TO ACCOMMODATE THE ABSENCE OF SCOURABLE SOILS ABOVE THE 100 YEAR SCOUR ELEVATION SHOWN IN THESE PLANS. PILES SHALL BE DRIVEN TO ?? TONS BASED ON THEORETICAL DRIVING RESISTANCE.

THIS INCLUDES ?? TONS OF RESISTANCE IN THE SCOURABLE LAYERS, AND ?? TONS RESISTANCE FOR DEAD AND LIVE LOAD BEARING CAPACITY.

For example: If a bridge requires 47 tons of resistance for dead and live load bearing capacity, and has to be driven through scourable soils that will provide 10 tons of driving resistance, the following note would be included in the substructure notes on the plans:

“PIER PILES ARE DESIGNED TO ACCOMMODATE THE ABSENCE OF SCOURABLE SOILS ABOVE THE 100 YEAR SCOUR ELEVATION SHOWN IN THESE PLANS. PILES SHALL BE DRIVEN TO 57 TONS BASED ON THEORETICAL DRIVING RESISTANCE. THIS INCLUDES 10 TONS OF RESISTANCE IN THE SCOURABLE LAYERS, AND 47 TONS RESISTANCE FOR DEAD AND LIVE LOAD BEARING CAPACITY.”

## **C11.9 Bridge superstructure**

### **C11.9.1 Index**

**Methods Memo No. 158: Anchor Bolt Placement**  
**15 November 2006**

See C11.9.2.

**Methods Memo No. 202: Revision to Deck Placement Notes**  
**1 October 2008**

See C11.9.2.

**Methods Memo No. 131: Continuous Welded Plate Girder Butt-Welded Flange Splice Substitutions**  
**17 August 2006**

See C11.9.2.

### **C11.9.2 Listing**

**Methods Memo No. 131: Continuous Welded Plate Girder Butt-Welded Flange Splice Substitutions**  
**17 August 2006**

The Bridge Design Manual (Art. 5.5.1.4.1.6) states in negative moment regions of CWPG bridges, a butt-welded flange splice may be justified if a weight savings of 800 lbs. per flange splice can be achieved. If a butt-welded flange splice is used, the designer is also directed to consider another option by the fabricator of extending the larger flange plate throughout the negative moment region and eliminating the welded flange splice. A note is to be included on the plans either permitting or denying the larger flange plate option.

The current practice of weight savings of 800 lbs. per flange splice to justify a butt-welded flange splice will be maintained. The need to consider other options will be eliminated.

Designers need only consider flange plate sizes shown on the plan as the only option. This simplification will ensure girder stresses and bolted field splices remain acceptable without having to check a number of other conditions. A plan note permitting or denying other flange plate options is therefore not required.

Instead the fabricators may request other flange plate options, but must submit design calculations by a registered professional engineer in the state of Iowa verifying the material substitution is satisfactory. This

submittal shall include determining if bolted field splices are acceptable with other flange plate options. Information informing the fabricator of this option will be provided in the following plan note.

**E/M 904**

“THE FABRICATOR MAY REQUEST THE SUBSTITUTION OF A SINGLE PLATE OPTION FOR THE TOP AND BOTTOM FLANGE IN THE NEGATIVE REGION BETWEEN FIELD BOLTED SPLICE PLATES. THE REQUEST SHALL INCLUDE DESIGN CALCULATIONS SIGNED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF IOWA VERIFYING THE PLATE SIZE SUBSTITUTION AND BOLTED FIELD SPLICE ARE SATISFACTORY.”

Provide this note on steel bridges where butt-welded shop splices are used in the negative regions to change flange plate sizes.

This policy change shall apply to all continuous welded plate girder bridge projects let after December 2006.

**Methods Memo No. 158: Anchor Bolt Placement  
15 November 2006**

In discussion with the field, it was brought to my attention that some contractors had been using reinforcing bars welded to the anchor bolt assemblies during placement of footing concrete to maintain proper alignment of the bolts. This practice will not be allowed because of concerns that the welding will alter the material properties of the anchor bolts possibly causing brittle failures. Therefore the following note shall be placed on any plan detail sheet where preset anchor bolts are used such as bases for light poles, cantilever sign structures, overhead sign trusses and bridge bearings if the preset option is used.

**E/M 924**

WELDING OF ANCHOR BOLTS SHALL NOT BE ALLOWED. THE CONTRACTOR SHALL OBTAIN A TEMPLATE FROM THE MANUFACTURER / FABRICATOR FOR PROPER PLACEMENT OF THE ANCHOR BOLTS.

In addition, this update shall be made to any plans that have not been turned in.

The office's standard details are in the process of being updated with this note and will be sent out at a later date. If you have any questions, please check with your section leader or myself.

**Methods Memo No. 144: Revised Policy for Transverse Joints for CCS and PPCB Bridges  
1 February 2008 (This memo was superseded by MM No. 202 and is obsolete except for item 2.  
Corrections are in bold.)**

For prestressed concrete beam bridges and continuous concrete slab bridges the following policy for deck placement has been changed.

1. Under the “CONCRETE PLACEMENT DIAGRAM” in CADD standards 4514-4521 and 4549-4552 for prestressed beam bridges and in the superstructure notes for continuous concrete slab bridges the following revised note has been added and shall be used for the deck placement.

**E/M 925**

THE CONCRETE DECK SLAB IS TO BE PLACED CONTINUOUSLY FROM ONE END OF THE BRIDGE TO THE OTHER. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT EVIDENCE THAT THE NECESSARY EQUIPMENT AND FACILITIES ARE AVAILABLE TO ACCOMPLISH THE REQUIRED RESULT. PERMISSIBLE TRANSVERSE SLAB

CONSTRUCTION JOINTS MAY BE USED, AT LOCATIONS SHOWN WITH APPROVAL OF THE ENGINEER.

For prestressed beam bridges with over 400 cubic yards of concrete for deck placement, the following note shall be used:

**E/M 926**

NOTE: CONCRETE DECK SLAB SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. ALTERNATE PROCEDURES FOR PLACING SLAB CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS.

2. For skews that are 30 degrees or less the transverse joint may be shown as a straight line parallel to the skew. For skews greater than 30 degrees the transverse joints should be shown as a step joint with a straight line allowed as an alternate.

See sheet H44-22-07 in the standards for example details for a prestressed beam bridge and **J44-22-06** and **J44-24-06** for a continuous concrete slab example for continuous concrete slab bridges.

This policy should be used on all bridge projects that have not yet been detailed. If you have any questions, please check with Dean Bierwagen or myself.

**Methods Memo No. 202: Revision to Deck Placement Notes for Prestressed Concrete Beam Bridges**

**1 October 2008 (This memo supersedes MM No. 144.)**

For prestressed concrete beam bridges the policy for deck placement has been revised. The option for continuous concrete placement of deck concrete (CADD note E/M 925) for concrete quantities of less than 400 cubic yards has been removed. CADD note E/M 926 as noted below shall be used in all cases.

**E/M 926**

NOTE: CONCRETE DECK SLAB SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. ALTERNATE PROCEDURES FOR PLACING SLAB CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS.

In addition, CADD standards 4514-4521 and 4549-4552 for prestressed beam bridges will be revised to show only E/M 926. The H standard will be updated as time permits.

This policy should be used on all bridge projects that have not yet been detailed. If you have any questions, please check with Dean Bierwagen or myself.

## **C11.10 New and repair bridge detail**

### **C11.10.1 Index**

**Methods Memo No. 171: Revised CADD Note E1020/M1020**

**27 July 2007**

See C11.10.2.

## C11.10.2 Listing

### Methods Memo No. 171: Revised CADD Note E1020/M1020

The following CADD notes have been updated to take advantage of the Materials IM 451 appendix E for approved suppliers of mechanical splices (to be issued October 2007). The coil tie option has been removed.

#### **E1020: Reinforcing, mechanical splices, stage construction**

THE \_\_\_\_ BARS IN THE ABUTMENT BACKWALLS SHALL BE SPLICED AT THE LOCATIONS SHOWN USING MECHANICAL SPLICE ASSEMBLIES. MECHANICAL SPLICE ASSEMBLIES CONSIST OF MECHANICAL SPLICERS AND REINFORCING SPLICE BARS AS REQUIRED TO FACILITATE THE USE OF THE MECHANICAL SPLICER. THE MECHANICAL SPLICE ASSEMBLY USED SHALL MEET THE REQUIREMENTS OF MATERIALS IM 451 APPENDIX E. . REINFORCING SPLICE BARS SHALL BE A MINIMUM OF \_\_\_\_ INCH DIA.

ALL MECHANICAL SPLICE ASSEMBLIES TO BE USED IN SPLICING \_\_\_\_ BARS IN THE ABUTMENT BACKWALLS SHALL BE EPOXY COATED.

THE COST OF ALL SPLICE ASSEMBLIES IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL EPOXY COATED" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL EPOXY COATED". A TOTAL OF x EPOXY COATED SPLICE ASSEMBLIES WILL BE REQUIRED.

This note is to be used in stage construction of the backwall where space is tight and bars in Stage I construction cannot extend past the construction joint and provide the required lap for Stage II construction. A note similar to this may be used whenever stage construction interferes with Stage I rebar placement (i.e. pier caps, abutment footing, bridge slab adjacent to sheet pile).

#### **M1020: Reinforcing, mechanical splices, stage construction**

THE \_\_\_\_ BARS IN THE ABUTMENT BACKWALLS SHALL BE SPLICED AT THE LOCATIONS SHOWN USING MECHANICAL SPLICE ASSEMBLIES. MECHANICAL SPLICE ASSEMBLIES CONSIST OF MECHANICAL SPLICERS AND REINFORCING SPLICE BARS AS REQUIRED TO FACILITATE THE USE OF THE MECHANICAL SPLICER. THE MECHANICAL SPLICE ASSEMBLY USED SHALL MEET THE REQUIREMENTS OF MATERIALS IM 451 APPENDIX E. REINFORCING SPLICE BARS SHALL BE A MINIMUM OF \_\_\_\_ mm DIA.

ALL MECHANICAL SPLICE ASSEMBLIES TO BE USED IN SPLICING \_\_\_\_ BARS IN THE ABUTMENT BACKWALLS SHALL BE EPOXY COATED.

THE COST OF ALL SPLICE ASSEMBLIES IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL EPOXY COATED" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL EPOXY COATED". A TOTAL OF x EPOXY COATED SPLICE ASSEMBLIES WILL BE REQUIRED.

This note is to be used in stage construction of the backwall where space is tight and bars in Stage I construction cannot extend past the construction joint and provide the required lap for Stage II construction. A note similar to this may be used whenever stage construction interferes with Stage I rebar placement (i.e. pier caps, abutment footing, bridge slab adjacent to sheet pile).

If you have any questions please check with me.



## **C11.11 Estimate reference**

### **C11.11.1 Index**

### **C11.11.2 Listing**

---

## **Appendix for obsolete and superseded memos**

### **Methods Memo No. 118: Longitudinal Grooving of Bridge Decks**

**6 April 2005 (The notes in this memo have been superseded by the notes in MM No. 128 and MM No. 143. See appendix below for MM No. 128 and C11.3.2 for MM No. 143.)**

Effective immediately the following bridge General Note should be added to all bridge plans that do not already have longitudinal grooving shown. The note shall be provided along with the bid item "Longitudinal Grooving in Concrete". Projects that are using high performance concrete or increased durability concrete should already have included a similar note.

E202

TRANSVERSE GROOVING OR TINING IN THE PLASTIC CONCRETE OF THE BRIDGE DECK OR BRIDGE FLOOR OVERLAY WILL NOT BE ALLOWED. LONGITUDINAL GROOVES SHALL BE CUT INTO THE HARDENED CONCRETE SURFACES USING A MECHANICAL CUTTING DEVICE. THIS SURFACE TREATMENT SHALL BE DONE AFTER ANY SURFACE GRINDING IS DONE AND BEFORE TRAFFIC IS ALLOWED ON THE SURFACE. EACH GROOVE SHALL BE 1/8 INCH  $\pm$  1/64 INCH IN WIDTH, 1/8 INCH + 1/32 INCH OR - 1/16 INCH IN DEPTH, AND UNIFORMLY SPACED AT 3/4 INCH INTERVALS. LONGITUDINAL GROOVING WILL NOT BE REQUIRED IN THE AREA APPROXIMATELY 2 FEET ADJACENT TO THE CURBS AND SHALL TERMINATE APPROXIMATELY 6 INCHES FROM ANY ARMORED JOINTS.

THE LONGITUDINAL GROOVING IS TO BE BID ON A SQUARE YARD BASIS. THE NUMBER OF SQUARE YARDS OF LONGITUDINAL GROOVING WILL BE PAID FOR AT THE CONTRACT PRICE PER SQUARE YARD BASED ON PLAN QUANTITIES. PRICE BID FOR "LONGITUDINAL GROOVING IN CONCRETE" SHALL BE FULL COMPENSATION FOR FURNISHING ALL EQUIPMENT AND LABOR REQUIRED TO GROOVE THE DECK IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

M202

TRANSVERSE GROOVING OR TINING IN THE PLASTIC CONCRETE OF THE BRIDGE DECK OR BRIDGE FLOOR OVERLAY WILL NOT BE ALLOWED. LONGITUDINAL GROOVES SHALL BE CUT INTO THE HARDENED CONCRETE SURFACES USING A MECHANICAL CUTTING DEVICE. THIS SURFACE TREATMENT SHALL BE DONE AFTER ANY SURFACE GRINDING IS DONE AND BEFORE TRAFFIC IS ALLOWED ON THE SURFACE. EACH GROOVE SHALL BE 3 mm  $\pm$  0.5 mm IN WIDTH, 3 mm + 1 mm OR - 1.5 mm IN DEPTH, AND UNIFORMLY SPACED AT 20 mm INTERVALS. LONGITUDINAL GROOVING WILL NOT BE REQUIRED IN THE AREA APPROXIMATELY 600 mm ADJACENT TO THE CURBS AND SHALL TERMINATE APPROXIMATELY 150 mm FROM ANY ARMORED JOINTS.

THE LONGITUDINAL GROOVING IS TO BE BID ON A SQUARE METER BASIS. THE NUMBER OF SQUARE METERS OF LONGITUDINAL GROOVING WILL BE PAID FOR AT THE CONTRACT PRICE PER SQUARE METER BASED ON PLAN QUANTITIES. PRICE BID

FOR “LONGITUDINAL GROOVING IN CONCRETE” SHALL BE FULL COMPENSATION FOR FURNISHING ALL EQUIPMENT AND LABOR REQUIRED TO GROOVE THE DECK IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

**Methods Memo No. 126: Notification for Removal of Bridges**

**22 April 2005 (The E134/M134 note has been withdrawn. See MM No. 132 in C11.3.1.)**

Effective immediately the following note shall be added to all plans not yet turned in where the existing structure is to be completely removed. The note shall be used until notification that the specifications have been updated, and its use can be discontinued.

E134/M134

THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, OF THE INTENDED STARTING AND COMPLETION DATES FOR THE REMOVAL OF A BRIDGE. NOTIFICATION SHALL BE NOT LESS THAN 25 CALENDAR DAYS PRIOR TO THE START OF BRIDGE DEMOLITION.

IF THE CONTRACTOR IS UNABLE TO BEGIN WORK ON THE INTENDED START DATE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, BY TELEPHONE WITH A WRITTEN FOLLOW-UP, OF THE NEW INTENDED START DATE. NOTIFICATION OF THE INABILITY TO COMMENCE WORK ON THE INTENDED START DATE SHALL BE MADE AS SOON AS POSSIBLE BEFORE, BUT NO LATER THAN, 1 WORKING DAY PRIOR TO THE ORIGINAL INTENDED START DATE TO MEET THE REQUIREMENTS OF 40 CFR 61.145(B). FAILURE TO COMMENCE WORK ON THE INTENDED START DATE, AND FAILURE TO NOTIFY OF A CHANGE IN START DATE 1 WORKING DAY PRIOR TO THE ORIGINAL START DATE, WILL RESULT IN THE NEED FOR A NEW 25 CALENDAR DAY NOTIFICATION TO THE ENGINEER.

THE CONTRACTING AUTHORITY WILL PROVIDE NOTIFICATION OF THE WORK TO THE IOWA DNR FOR POSSIBLE REPRESENTATION AT THE SITE DURING THE DEMOLITION PROCESS.

The Office of Location and Environment (OLE) has requested the review of all bridge structures scheduled to be removed to determine if asbestos is present. The bridge office will provide a list of all bridges to be removed, to OLE for their field review. If asbestos is present it will need to be removed prior to demolition of the structure. The asbestos removal will be accomplished by specialty contractors prior to, or in coordination with, the bridge contractor's project. OLE will generally be responsible for initiating the asbestos removal contract. If asbestos removal cannot be accomplished prior to the bridge contractor's start date, a coordination note will be placed in the bridge plans.

In addition, DNR has requested notification prior to demolition in order to verify no asbestos is present on any bridge structure prior to starting the demolition process. This notification will be made by OLE based on information provided by the Resident Construction Engineer.

The attached note (E134/M134) shall be added to the plan to accomplish this notification requirement of the DNR.

**Methods Memo No. 128: Revised Longitudinal Grooving of Bridge Decks Plan Note**

**3 June 2005 (Notes E202 and M202 have been superseded by the notes in MM No. 143. See C11.3.2.)**

The longitudinal grooving note for bridge decks has been revised as shown. The plan note should be updated on all bridge projects not yet turned in where the E202/M202 note has been used.

E202

TRANSVERSE GROOVING OR Tining in the plastic concrete of the bridge deck or bridge floor overlay will not be allowed. Longitudinal grooves shall be cut into the hardened concrete surfaces using a mechanical cutting device. Longitudinal grooving shall be done after any surface correction grinding is done and before traffic is allowed on the surface. Each groove shall be  $1/8$  inch  $\pm$   $1/64$  inch in width,  $1/8$  inch  $\pm$   $1/32$  inch or  $- 1/16$  inch in depth, and the grooves shall be uniformly spaced at  $3/4$  inch intervals measured from center of groove to center of groove. Longitudinal grooving shall not be within the area approximately 2 feet adjacent to the curbs and shall terminate approximately 6 inches from any joints. The quantity of longitudinal grooving in concrete, in square yards, will be the quantity shown in the contract documents. The contractor will be paid the contract unit price for longitudinal grooving in concrete per square yard.

M202

TRANSVERSE GROOVING OR Tining in the plastic concrete of the bridge deck or bridge floor overlay will not be allowed. Longitudinal grooves shall be cut into the hardened concrete surfaces using a mechanical cutting device. Longitudinal grooving shall be done after any surface correction grinding is done and before traffic is allowed on the surface. Each groove shall be  $3$  mm  $\pm$   $0.5$  mm in width,  $3$  mm  $\pm$   $1$  mm or  $- 1.5$  mm in depth, and the grooves shall be uniformly spaced at  $20$  mm intervals measured from center of groove to center of groove. Longitudinal grooving shall not be within the area approximately  $600$  mm adjacent to the curbs and shall terminate approximately  $150$  mm from any joints. The quantity of longitudinal grooving in concrete, in square meters, will be the quantity shown in the contract documents. The contractor will be paid the contract unit price for longitudinal grooving in concrete per square meter.

**Methods Memo No. 129: Reinforcing Designation on Plans**  
**8 July 2005 (This note has been replaced by notes in MM No. 189, 1 March 2008.)**

Based on discussions with the reinforcing industry it has been brought to our attention that the reinforcing industry has converted all of their reinforcing bar designations to soft metric bars. All bridge projects whether metric or US customary are being provided with the soft metric reinforcing bars. Therefore until the specifications and standards can be updated to address this issue the following note and table shall be placed on the US customary bridge plans:

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 is  $5/8$  inch diameter bar). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

English Size	Bar Designation
3	10
4	13
5	16
6	19
7	22
8	25
9	29
10	32
11	36

In addition because of concern with the hard and soft metric bar sizes, the following note and updated conversion table for metric projects shall be provided on the plans:

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH “HARD METRIC SIZE”. THESE “HARD METRIC SIZE” BARS ARE NOT AVAILABLE. CURRENTLY THE INDUSTRY IS FURNISHING REINFORCING BARS WITH A “SOFT METRIC BAR DESIGNATION”. ALL “HARD METRIC SIZE” REBARS SHALL BE CONVERTED TO REBAR WITH THE NOTED “SOFT METRIC BAR DESIGNATION”. THE SPACING OR PATTERN OF BAR PLACEMENT SHALL BE AS SHOWN IN THESE PLANS, AND NO CHANGES IN THE SPACING OR THE PATTERN WILL BE ALLOWED WITH THE SUBSTITUTION.

THE “SOFT METRIC BAR DESIGNATION” IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ALL REINFORCING BARS SHOWN ON THE PRESTRESSED BEAM DETAIL SHEETS ARE LABELLED WITH BAR NOTATIONS CONSISTENT WITH THE “SOFT METRIC BAR DESIGNATION” SHOWN IN THE TABLE BELOW AND BELOW AND NO CONVERSION FROM HARD METRIC SIZE IS REQUIRED.

Hard Metric Size	Soft Metric Bar Designation
*	10
10	13
15	16
20	19
*	22
25	25
*	29
30	32
35	36

\*NO EQUIVALENT “HARD METRIC SIZE”

This update shall be made to all bridge plans that have not yet been turned in to the Office of Bridges and Structures.

#### **Methods Memo No. 142: LRFD Plan Specification Notes**

**8 November 2005 (These notes have been revised for HS25 loading and concrete strengths. See MM No. 157 in C11.2.2.)**

The following notes and commentary should be used in situations where the complete superstructure (beams and deck) will be designed using LRFD. Substructures will continue to be designed using the AASHTO Standard Specifications.

E50C

SPECIFICATIONS:

DESIGN: SUBSTRUCTURE: AASHTO SERIES OF 1996.

SUPERSTRUCTURE: AASHTO LRFD SERIES OF 2004.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2001, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

?

?

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1996 AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SERIES OF 2004.

REINFORCING STEEL IN ACCORDANCE WITH STANDARD AASHTO SECTION 8 AND LRFD AASHTO SECTION 5, GRADE 60.

CONCRETE IN ACCORDANCE WITH STANDARD AASHTO SECTION 8 AND LRFD AASHTO SECTION 5,  $f'_c = 3,500$  PSI.

PRESTRESSED CONCRETE BEAMS, SEE DESIGN SHEET ?.

STRUCTURAL STEEL IN ACCORDANCE WITH STANDARD AASHTO SECTION 10 AND LRFD AASHTO SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W).

These standard bridge design notes are to be used on the front estimate sheet where the superstructure is designed using LRFD and the substructure is designed using the Standards Specification.

E104C

THE BRIDGE SUBSTRUCTURE IS DESIGNED FOR HS20-44 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

THE BRIDGE SUPERSTRUCTURE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

Use these notes for the design live load requirement for all new bridges on primary highways, where the superstructure is designed using LRFD and the substructure is designed using the Standards Specification.

**Methods Memo No. 167: CADD Note E54/M54 for 404 Permits  
25 April 2007 (These notes were voided by MM No. 193, 1 March 2008.)**

Void notes E54A/M54A and E54B/M54B.

The following CADD note E54/M54 has been released and should be used in the General Notes for all projects let after July 1, 2007, when 404 permits are required. CADD notes E54A/M54A and E54B/M54B have been voided from the system.

**E54/M54: 404 Permit**

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS (Insert 'NATIONWIDE PERMIT ??', 'REGIONAL PERMIT 7', or 'INDIVIDUAL PERMIT' as appropriate), PERMIT NO. (Insert the corps' project-specific permit number, if applicable). A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT OFFICE OF CONTRACTS UPON REQUEST. THE U.S. ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

The Office of Location and Environment will be getting the pertinent permit information for the 404 permits and sending it to me for our office. I will be distributing to the section leaders including the Consultant Coordination section leader who are involved in the projects.

The offices will be working toward changing the project scheduling system (PSS) so that DOT personnel can see the 404 permit information directly for a project. This should assist in getting the permit information in a timely fashion.

If you have any questions please check with me.